Remarks

The Office Action mailed August 9, 2006, has been carefully reviewed and the following amendments have been made in consequence thereof.

Claims 1-31 are now pending in this application. Claims 1-29 are rejected. Claims 30 and 31 are newly added. No new matter has been added. A fee calculation sheet is submitted herewith for the newly added claims.

The rejection of Claims 1-9, 19 and 26-29 under 35 U.S.C. § 102(e) as being anticipated by Wang (U.S. Patent No. 6,828,788) is respectfully traversed.

Wang describes a method for magnetic resonance imaging on the basis of a partial parallel acquisition (PPA) (abstract). In step S1 of the method, k-space under-scanning ensues by measuring, by means of a progressive rotation of a readout gradient through a fixed step angle, a reduced projection dataset (col. 5, lines 47-55). In steps S2 and S3 of the method, a Cartesian resultant dataset as well as a Cartesian reference dataset are generated by transformation of a projection dataset onto different Cartesian grids (col. 5, line 59 - col. 6, line 16). In order to implement a Fourier transformation that ultimately supplies the actual magnetic resonance topography (MRT) image, data in the k-space must be projected onto a Cartesian grid (col. 7, lines 9-14).

Claim 1 recites a method for a medical examination including, "polar phase encoding to generate a plurality of signals forming datasets representative of an object, wherein the datasets form a grid in polar coordinates in a k-space."

Wang does not describe or suggest a method for a medical examination as recited in Claim 1. Specifically, Wang does not describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. A description of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset does not teach polar phase encoding to generate a plurality of signals forming

datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Cartesian is not polar. Accordingly, Wang does not describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang.

Claims 2-9 and 19 depend, directly or indirectly, from independent Claim 1 which is recited above. When the recitations of Claims 2-9 and 19 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-9 and 19 likewise are patentable over Wang.

Claim 26 recites a method for a medical examination including, "sampling datasets on to a grid of polar coordinates in a k-space to generate signals representative of an object of interest that is being medically examined."

Wang does not describe or suggest a method for a medical examination as recited in Claim 26. Specifically, Wang does not describe or suggest sampling datasets on to a grid of polar coordinates in a k-space to generate signals representative of an object of interest that is being medically examined. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. A description of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset does not teach sampling datasets on to a grid of polar coordinates in a k-space to generate signals representative of an object of interest that is being medically examined. Cartesian is not polar. Accordingly, Wang does not describe or suggest sampling datasets on to a grid of polar coordinates in a k-space. For the reasons set forth above, Claim 26 is submitted to be patentable over Wang.

Claim 27 depends from independent Claim 26 which is recited above. When the recitations of Claim 27 is considered in combination with the recitations of Claim 26, Applicants submit that dependent Claim 27 likewise is patentable over Wang.

Claim 28 recites a magnetic resonance imaging (MRI) system including, "a main magnet to generate a uniform magnetic field . . . a radio frequency pulse

generator for exciting the magnetic field . . . a gradient field generator for generating gradients extending in different directions in the magnetic field . . . a receiver for receiving magnetic field magnetic resonance (MR) signals representative of an object . . . and a controller for polar phase encoding to generate the MR signals forming datasets representative of the object, wherein the datasets form a grid in polar coordinates in a k-space."

Wang does not describe or suggest a MRI system as recited in Claim 28. Specifically, Wang does not describe or suggest a controller for polar phase encoding to generate the MR signals forming datasets representative of the object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. A description of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset does not teach a controller for polar phase encoding to generate the MR signals forming datasets representative of the object, where the datasets form a grid in polar coordinates in a k-space. Cartesian is not polar. Accordingly, Wang does not describe or suggest a controller for polar phase encoding to generate the MR signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 28 is submitted to be patentable over Wang.

Claim 29 recites a controller programmed to, "polar phase encode to generate a plurality of magnetic resonance (MR) signals forming datasets representative of an object, wherein the datasets form a grid in polar coordinates in a k-space."

Wang does not describe or suggest a controller as recited in Claim 29. Specifically, Wang does not describe or suggest a controller programmed to polar phase encode to generate a plurality of MR signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. A description of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset does not teach a controller programmed to polar phase

encode to generate a plurality of MR signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Cartesian is not polar. Accordingly, Wang does not describe or suggest a controller programmed to polar phase encode to generate a plurality of MR signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 29 is submitted to be patentable over Wang.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-9, 19 and 26-29 be withdrawn.

The rejection of Claims 21-24 under 35 U.S.C. § 103(a) as being unpatentable over Wang alone is respectfully traversed.

Wang is described above.

Claims 21-24 depend from independent Claim 1, which is recited above.

Wang does not describe or suggest a method for a medical examination as recited in Claim 1. Specifically, Wang does not describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. A description of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset does not teach polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Cartesian is not polar. Accordingly, Wang does not describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang.

When the recitations of Claims 21-24 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 21-24 likewise are patentable over Wang.

In addition to the arguments set forth above, Applicants respectfully submit that the Section 103 rejection of Claims 21-24 as being unpatentable over Wang is not a proper rejection. As is well established, the mere assertion that it would have been obvious to one of ordinary skill in the art to have modified Wang to obtain the claimed recitations of the present invention does not support a prima facie obvious rejection. Rather, each allegation of what would have been an obvious matter of design choice must always be supported by citation to some reference work recognized as standard in the pertinent art and the Applicants given the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference. Applicants have not been provided with the citation to any reference supporting the combination made in the rejection. The rejection, therefore, fails to provide the Applicants with a fair opportunity to respond to the rejection, and fails to provide the Applicants with the opportunity to challenge the correctness of the rejection. Of course, such combinations are impermissible, and for this reason, Applicants request that the Section 103 rejection of Claims 21-24 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 21-24 be withdrawn.

The rejection of Claims 10 and 12 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of either Wu et al. (U.S. Pat. No. 6,591,128) ("Wu") or Loncar et al. (U.S. Pat. No. 5,500,593) ("Loncar") is respectfully traversed.

Wang is described above.

Wu describes a radio frequency (RF) coil construction for a magnetic resonance imaging (MRI) system in which a plurality of RF coils can be removed, relocated, and detached (abstract; col. 3, lines 14-49). A front coil section 42 of the MRI system can be moved freely with respect the rear coil section 44, or removed altogether, without the need to retune either coil system (col. 7, lines 8-42). A reconstruction or array processor 70 of the MRI system performs a two- or three-dimensional inverse Fourier transform, or other known transform, to reconstruct a volumetric image representation (col. 6, lines 14-17).

Loncar describes a method for steady-state magnetic resonance (col. 1, lines 63-64). The method includes a series of magnetic resonance (MR) sequences of saturation pulses and gradient pulses along the x, y, and z axes (col. 1, line 64- col. 2, line 4; col. 3, line 6 – col. 4, line 13). In the method, after presaturation and spoiler gradients have been applied, the timing means 42 actuates a steady-state sequence controller 48 which causes a steady-state sequence 72 to be run (col.4, lines 14-17). In the method, a plurality of received and demodulated resonance signals are reconstructed with a reconstruction processor 80 into a volume representation (col. 6, lines 52-55). The reconstruction processor 80 can run a three-dimensional inverse Fourier transform reconstruction (col. 6, lines 55-57).

Claims 10 and 12 depend from independent Claim 1, which is recited above.

Neither Wang nor Loncar, considered alone or in combination, describe or suggest a method for a medical examination as recited in Claim 1. Specifically, neither Wang nor Loncar, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Loncar describes a method for steady-state magnetic resonance that includes generating a series of MR sequences of saturation pulses and gradient pulses along the x, y, and z-axes. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset and a description in Loncar of a method for steady-state magnetic resonance that includes generating a series of MR sequences of saturation pulses and gradient pulses along the x, y, and z-axes does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, neither Wang nor Loncar, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of either Wu or Loncar.

When the recitations of Claims 10 and 12 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 6 likewise is patentable over Wang in view of either Wu or Loncar.

Neither Wang nor Wu, considered alone or in combination, describe or suggest a method for a medical examination as recited in Claim 1. Specifically, neither Wang nor Wu, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Wu describes removing, relocating, and detaching a plurality of RF coils of an MRI system. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset and a description in Wu of removing, relocating, and detaching a plurality of RF coils does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, neither Wang nor Wu, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of either Wu or Loncar.

When the recitations of Claims 10 and 12 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 6 likewise is patentable over Wang in view of either Wu or Loncar.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 10 and 12 be withdrawn.

The rejection of Claims 11, 13-15 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Tasaka et al. (U.S. Pat. No. 6,515,477) ("Tasaka") is respectfully traversed.

Wang is described above.

Tasaka describes a method and apparatus for magnetic resonance signal collection that suppresses false images caused by motion of an imaged object (abstract). To suppress the false images either a plurality of trajectories are randomized or two trajectories are taken at ninety degrees to each other then the angle nearing a starting trajectory is repeatedly bisected (col. 2, lines 43-57). In the method, a data processing section 170 performs one-dimensional inverse Fourier transformation on view data to provide projections in a plurality of directions of an imaged object 300 in an actual space, and back-projects the projections to reconstruct a tomographic image (col. 6, lines 25-29). The image can also be reconstructed by converting data that are radially arranged in a k-space into a data array arranged in a grid and performing two-dimensional inverse Fourier transformation an the data in the grid array (col. 6, lines 39-43).

Claims 11, 13-15 and 17 depend from independent Claim 1, which is recited above.

Neither Wang nor Tasaka, considered alone or in combination, describe or suggest a method for a medical examination as recited in Claim 1. Specifically, neither Wang nor Tasaka, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Tasaka describes suppressing false images by collecting a plurality of magnetic resonance signals. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset and a description in Tasaka of suppressing false images by collecting a plurality of magnetic resonance signals does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, neither Wang nor Tasaka, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of Tasaka.

When the recitations of Claims 11, 13-15 and 17 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 11, 13-15 and 17 likewise are patentable over Wang in view of Tasaka.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 11, 13-15 and 17 be withdrawn.

The rejection of Claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Wu et al., further in view of Simonetti (U.S. Pat. No. 6,076,042) is respectfully traversed.

Wang and Wu are described above.

Simonetti describes a method of distinguishing arteries from veins using a contrast agent and time-based information (col. 1, line 59 – col. 2, line 11). In the method, course magnetic resonance (MR) data of voxels in a Volume of Interest (VOI) enhancing as a function of time are recorded and then a fine MR of the voxels are equilibrium is taken (col. 4, lines 40-65). The voxels are scaled (col. 2, lines 8-33). In the method, a Maximum Intensity Projection (MIP) is then generated 22 using an MR angiogram in which a plurality of image intensities have been scaled (col. 6, lines 3-6).

Claim 16 depends from independent Claim 1, which is recited above.

None of Wang, Wu and Simonetti, considered alone or in combination, describe or suggest a medical examination as recited in Claim 1. Specifically, none of Wang, Wu and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Wu describes removing, relocating, and detaching a plurality of RF coils of an MRI system. Simonetti describes distinguishing arteries from veins by recording the change of voxels as a function of time. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset, a

description in Wu of removing, relocating, and detaching a plurality of RF coils of an MRI system, and a description in Simonetti of distinguishing arteries from veins by recording the change of voxels as a function of time does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, none of Wang, Wu and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of Wu, further in view of Simonetti.

When the recitations of Claim 16 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 16 likewise is patentable over Wang in view of Wu, further in view of Simonetti.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claim 16 be withdrawn.

The rejection of Claims 18 and 25 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Tasaka, further in view of Simonetti is respectfully traversed.

Wang, Tasaka, and Simonetti are described above.

Claim 18 depends from independent Claim 1, which is recited above.

None of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest a medical examination as recited in Claim 1. Specifically, none of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Tasaka describes suppressing false images by collecting a plurality of magnetic resonance signals. Simonetti describes distinguishing arteries from veins by recording the change of voxels as a function of time. A description in Wang of gradients generated in directions of a Cartesian

coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset, a description in Tasaka of suppressing false images by collecting a plurality of magnetic resonance signals, and a description in Simonetti of distinguishing arteries from veins by recording the change of voxels as a function of time does not teach polar phase encoding to generate a plurality of signals forming datasets thatt form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, none of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of Tasaka, further in view of Simonetti.

When the recitations of Claim 18 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 18 likewise is patentable over Wang in view of Tasaka, further in view of Simonetti.

Claim 25 recites a MR method for medical examinations including, "injecting a patient with a contrast agent that flows into a vasculature of the patient . . . acquiring MR signals produced by spins in the vasculature from an MR imaging system . . . and polar phase encoding to generate the MR signals forming datasets representative of the patient, wherein the datasets form a grid in polar coordinates in a k-space."

None of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest a MR method for medical examinations as recited in Claim 25. Specifically, none of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate the MR signals forming datasets representative of the patient, wherein the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Tasaka describes suppressing false images by collecting a plurality of magnetic resonance signals. Simonetti describes distinguishing arteries from veins by recording the change of voxels as a function of time. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset, a description in Tasaka of suppressing false images by collecting a plurality of magnetic resonance signals, and

a description in Simonetti of distinguishing arteries from veins by recording the change of voxels as a function of time does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian of Wang is not polar. Accordingly, none of Wang, Tasaka, and Simonetti, considered alone or in combination, describe or suggest polar phase encoding to generate the MR signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 25 is submitted to be patentable over Wang in view of Tasaka, further in view of Simonetti.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 18 and 25 be withdrawn.

The rejection of Claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Kuhara et al. (U.S. Pat. No. 5,722,409) ("Kuhara") is respectfully traversed.

Wang is described above.

Kuhara describes a nuclear magnetic resonance imaging scheme capable of reducing a plurality of eddy currents induced within a living body outside of an imaging region so as to protect a patient against nerve stimulation due to the plurality of eddy currents (abstract). The scheme also obtains a plurality of magnetic resonance (MR) images at high image quality by protecting image quality against chemical artifacts and artifacts in which a ghost image appears at positions distanced by a half of a size of an imaged region from an actual image, also called an N/2 artifact (id.; col. 3, lines 3-9). The artifacts are prevented by applying a reading gradient magnetic field Gr 51 along a phase encoding gradient magnetic field Ge 52 (abstract). In relation to the reading gradient magnetic field Gr 51 which is repeatedly switching its polarity at a high speed, a phase encoding gradient magnetic field Ge 52 is applied at a rate of once in every two switchings of the reading gradient magnetic field Gr 51 (col. 10, lines 51-56). A reading gradient magnetic field scanning order in K-space can be different from a block-wise Cartesian scanning pattern and can be a Cartesian interlace scanning pattern or a combination of block-wise and interlace (col. 13, lines 37-57; Figure 22A). A Cartesian interlace scanning pattern on the K-space of a simple division scheme and a Cartesian interlace scanning pattern on the K-space

of a cycle of a hybrid scheme of radio frequencies designed by Carr, Purcell, Meiboom and Gill (CPMG) with three echoes and five gradient echoes are illustrations of a modified division scan scheme (col. 13, lines 37-57; Figure 23A).

Claim 20 depends from independent Claim 1, which is recited above.

Neither Wang nor Kuhara, considered alone or in combination, describe or suggest a medical examination as recited in Claim 1. Specifically, neither Wang nor Kuhara, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets representative of an object, where the datasets form a grid in polar coordinates in a k-space. Rather, Wang describes a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Kuhara describes a nuclear magnetic resonance imaging scheme capable of reducing the eddy currents by using Cartesian interlace scanning patterns. A description in Wang of gradients generated in directions of a Cartesian coordinate system, a Cartesian resultant dataset, and a Cartesian reference dataset and a description in Kuhara of Cartesian interlace scanning patterns does not teach polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. Cartesian is not polar. Accordingly, neither Wang nor Kuhara, considered alone or in combination, describe or suggest polar phase encoding to generate a plurality of signals forming datasets that form a grid in polar coordinates in a k-space. For the reasons set forth above, Claim 1 is submitted to be patentable over Wang in view of Kuhara.

When the recitations of Claim 20 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 20 likewise is patentable over Wang in view of Kuhara.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claim 20 be withdrawn.

Moreover, Applicants respectfully submit that the Section 103 rejections of Claims 10-18 and 20-25 are not proper rejections. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the

claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Wang, Wu, Loncar, Tasaka, Simonetti, and Kuhara, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Wang with Wu, Loncar, Tasaka, Simonetti, or Kuhara because there is no motivation to combine the references suggested in the cited art itself.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants disclosure in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejections are based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Wang teaches a method for magnetic resonance imaging that uses gradients generated in directions of a Cartesian coordinate system to create a Cartesian resultant dataset and a Cartesian reference dataset. Wu et al. teach removing, relocating, and detaching a plurality of RF coils of an MRI system. Loncar et al. teach a method for steady-state magnetic resonance that includes generating a series of MR sequences of saturation pulses and gradient pulses along the x, y, and z-axes. Tasaka et al. teach suppressing false images by collecting a plurality of

magnetic resonance signals. Simonetti teaches distinguishing arteries from veins by recording the change of voxels as a function of time. Kuhara et al. teach a nuclear magnetic resonance imaging scheme capable of reducing the eddy currents by using Cartesian interlace scanning patterns. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejections appear to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejections of Claims 10-18 and 20-25 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the rejections of Claims 10-18 and 20-25 under 35 U.S.C. 103(a) be withdrawn.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

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